ABSTRACT OF THE DISCLOSURE

A substrate-coating system and an associated substrate-heating method, wherein the substrate-coating system is equipped with a substrate holder (1, 2) for holding at least one substrate at a coating position where it is coated on a coating side, and with a substrate heater (5, 6). The method includes heating at least one substrate that has been brought into such a system while it is being coated. The substrate heater includes a backside heater (6) for actively heating the substrate from its backside, i.e., that side opposite the side to be coated, while it is at its coating position. A heat-conducting element that is brought into thermal contact with a surface of the substrate may also be provided. Heater power is then regulated, based on the difference between the actual substrate temperature and a preset, desired, substrate temperature, and thereby limited such that the temperature of the heat-conducting element will not excessively increase over that of the substrate. The system and method are particularly applicable, e.g., to coating optical components fabricated from CaF_2.